

DARPA-BAA-15-13 EQUIPS
Frequently Asked Questions (FAQs)
as of 2/27/15

47Q: I have questions regarding CVs and Letters of Support for DARPA-BAA-15-13. In reading through the announcement, I did not see any reference to including CVs or Letters of Support. I understand that section vii. Personnel, Qualifications and Commitments requires information on key personnel. In addition to this section, can individual CVs and Letters of Support be included?

47A: Per Section IV.B.2.a of the BAA, information that is not explicitly called for in the Technical and Management Proposal description should not be included except as described in Section IV.B.2.b.xiv (Bibliography). DARPA will not consider pages in excess of the limits described in the BAA.

46Q: In previous DARPA proposal submissions the BAA packet (not all, but some) included a budget template in Excel that was to be uploaded as an attachment to the grants.gov proposal. Is there a budget template available for the DARPA-BAA-15-13 announcement? Is it possible, or encouraged to use such a budget template for this announcement?

46A: No budget template is available for this BAA. Proposers may use their own format as long as all of the information requested in the BAA is included.

45Q: We note from Modification 1 that the submission date for this BAA is March 10, 2015. However, we would like to request an extension to the submission deadline to May 29, 2015.

45A: DARPA does not anticipate extending the proposal due date beyond the current deadline of March 10, 2015.

44Q: Is it acceptable for a UK-based Prime to team with a US-based Sub-Contractor?

44A: Yes.

43Q: Volume 1, point IV.B.2.b.xii: Cost Summary: The BAA states on page 20: "Provide the cost summary as described in Section IV.B.2.c.iii." However, point iii (page 24) relates to the numerous Cost Details, while point ii relates to the Cost Summaries. Are we to include only the Cost Summary items under point ii in Volume 1?

43A: Yes, that is correct.

42Q: Attachment 2, the Cost Volume Checklist: The BAA states on page 23, footnote 5, that use of this checklist and the other templates posted at www.fbo.gov is not required. However, the first paragraph on the Checklist says that this completed worksheet must be included in the Cost Proposal. We are assuming that inclusion of the Checklist is optional. Can you confirm?

42A: Yes, that is correct.

41Q: Cost Element Summary: We are submitting as the lead institution, with several other universities as subawardees. We assume that we should pattern our budget summary after

Attachment 4 (Grant & Cooperative Agreement Cost Element Summary) rather than Attachment 3 (Contract Cost Element Summary). Can you confirm?

41A: Per the BAA, the use of those attachments is optional. You may use your own format. Should you choose to use one of those templates, you should use the one designated for the type of award instrument you are requesting (e.g., cooperative agreement or contract).

40Q: Travel costs: The BAA states on page 9 that proposals must budget for hosting "site visits with the Government team when required." Are there any guidelines on the expected frequency of site visits, for the sake of budgeting?

40A: In each year of the program, we estimate up to 2 site visits by the government team and up to 2 visits by the Application teams.

39Q: The call asks for a breakdown of the project cost by month and by task. My understanding is that the "tasks" refer to individual efforts (with milestones, etc.), not the thrust areas. So, we may have 15-20 tasks, even though there are only 3 thrust areas. Is this correct?

39A: Yes.

38Q: On grants.gov, there was a recent change in the application package for this solicitation. The original application package listed the following forms as Optional:

- 1) Project/Performance Site Locations
- 2) Research and Related Other Project Information
- 3) Research and Related Senior/Key Person Profile (Expanded)
- 4) Research & Related Budget 10YR
- 5) R & R Subaward Budget Attachment(s) Form 10YR 30 ATT
- 6) Disclosure of Lobbying Activities (SF-LL)
- 7) Attachments

In the revised application package, the Attachments form is now Mandatory and the remaining forms above are no longer listed. Are we required to include any of the above forms as attachments in the mandatory Attachments form? In regards to the budget, are we required to use the Research & Related Budget form? Are there are specific forms that should be completed for subawards?

38A: You should follow the current application package instructions; i.e., the only forms that should be included are the SF 424, the Attachments Form and, if applicable, the SF-LLL.

37Q: TA 3 calls for "stochastic optimization" among other approaches, but this term is broadly applied in the academic literature to variety of loosely related techniques. Is a specific variant desired by the BAA, e.g., control theory based or stochastic programming based, or is the thrust meant to be interpreted broadly?

37A: The thrust is meant to be interpreted broadly, but the optimization framework is meant to cover stochastic inputs, cost functionals, and constraints that are used in the design and decision making framework.

36Q: On page 8 of the BAA, there are two bullets that describe what should be accomplished in Phase I and in Phase II of the period of performance. The Phase I bullet focuses specifically on forward UQ analysis of the test-case, while the other parts of the BAA (inverse problem from TA 1 and everything from TAs 2-3) are mentioned only in the Phase II bullet. In contrast, the table that begins at the bottom of page 8 and the sample table that begins on page 19 both list milestones / accomplishments for all TAs in both phases of the program. This has obvious scheduling and costing implications for the full proposal. Could you please clarify your intended guidance on the split of work between Phase I and Phase II?

36A: Work on all TAs should be performed in both phases. But the expectation is that on the particular test case, a complete forward UQ analysis should be performed while the theoretical research on TA2 and TA3 occurs concurrently.

35Q: For the full proposal under "Administrative and National Policy Requirements" we must complete a table that includes specifying whether individuals are "non-US" individuals. Does this mean identifying people who are not US Citizens or who are not US Nationals? (US Nationals typically include, e.g., permanent resident, non-citizens.)

35A: You should identify individuals who are not US Citizens.

34Q: Should a proposal from a DOE National Laboratory, Federally Funded Research and Development Center (FFRDC) be submitted via the DARPA system (<https://baa.darpa.mil>) or via the grants.gov system?

34A: Please use the DARPA BAA Submission site (<https://baa.darpa.mil>).

33Q: I understand that the Cost Summaries for EQUIPS proposals due February 25, 2015 must be submitted by phase, task, and month. In addition, I understand that the program will be executed in two 18 month phases. In looking at the Contract Cost Element Summary form, I would like to know how best to use the form: For the first 18-month phase, do we put the first year in Year 1 and the next 6 months in Option Year? And similarly for the second 18-month phase, a year in Year one and 6 months in the Option Year? Your advice on how best to describe the proposal budget year on the Grant or Cooperative Agreement Summary form would also be appreciated.

33A: First, the EQUIPS proposal due date was extended to March 10, 2015 (see BAA amendment at www.fbo.gov). Second, per the BAA, the Cost Element Summary forms are not required, you may use your own format for providing the information requested in the BAA.

32Q: Given that we missed the Abstract deadline of 1/15, is there another recommended channel for program manager pre-approval before engaging the team in preparing a full proposal?

32A: No.

31Q: Can an organization participate on more than one proposal?

31A: Yes. However, should both proposals be selected for award negotiation, the Statements of Work may need to be modified to ensure there is no duplication of effort. DARPA will not fund duplicative efforts.

30Q: Is there an upper limit on the budget per proposal?

30A: Per the BAA, the total budget available for award is approximately \$27M and DARPA anticipates 5-10 total multidisciplinary teams. However, the BAA also states that the level of funding for individual awards has not been predetermined and will depend on the quality of the proposals received and the availability of funds.

29Q: Can a proposal list individuals from two separate organizations as co-PIs and get direct funding?

29A: No, proposals must designate one organization as the prime.

28Q: Approximately when will the award be given?

28A: DARPA anticipates awards by the end of August 2015.

27Q: Would progress on the Phase 1 act as go/no go decision for providing funds for Phase 2?

27A: Per the BAA, progress in the program will be measured against broad program metrics and more technically specific performer chosen metrics; these milestones will also potentially be used to decide whether a Phase I performer team will continue on to Phase II of the program.

26Q: For a proposal involving university and industry, can you provide advice on which organization should take the lead, how to manage shared IP (i.e., protect each party's proprietary info) and whether we should recruit a software company as a subcontractor to implement some results from our proposal?

26A: It is up to each proposer to determine the team make-up that best fits their approach. But given the limited resources and mathematical nature of this BAA, you should make sure you have enough resources for the mathematical innovations, especially in Phase I.

25Q: Is the "Design and Decision Making" application area suitable for proposing under this BAA?

25A: This application area and focus on model uncertainty is certainly of interest. If you are planning to submit a full proposal, please keep in mind that your approach should be fundamental and not focused on integrating analysis tools into software.

24Q: Does the proposal require software to be delivered, or are algorithms and methods demonstration the required deliverables?

24A: There is no requirement for delivery of software, but the idea is to have the proposers ready for a discussion and consideration of transition of their results to national labs or the services.

23Q: The goal of the program is obviously to advance the mathematics for UQ for complex simulation, and the role of the application is primarily to ground the research in a realistic problem of interest to DoD. While the objective is not to solve a particular UQ or design question for the chosen application, a typical approach to demonstrate the validity of new UQ and/or stochastic optimization techniques is through comparison with experimental data for a particular problem. Therefore, there may be need to generate data experimentally in cases where insufficient data exist. Is generating the necessary experimental data considered to be within the scope of the call? If not, will it be sufficient to generate and work with synthetic data (e.g., using a more complex model and assumed input uncertainties as "reality") for validation purposes?

23A: If there are no readily available experimental data for the application area considered, or the PIs do not have an industry or lab partner with access to "realistic" data, then the use of synthetic data is fine. But, at some point, if "real" data becomes available through participation of the Application Team, then the PIs should be prepared to test their results against the real data.

22Q: In the table of quantitative metrics on page 19 of the BAA, it is indicated that the goals are "notional," but there has still been much concern expressed over the actual numbers used in the examples. For instance, even the most complex multi-physics codes in use today (and the foreseeable future) have only 100's to a few 1000 uncertain parameters. Is it correct to assume that these numbers were meant to be motivational and aspirational (e.g., intended to indicate that projects should be aspiring well beyond, say, a small number of parameters), or do these numbers accurately reflect the expectation of the order of magnitude of the problems and gains that the program manager expects to be addressed within the 3-year timeframe of the project?

22A: The emphasis on numerical metrics is indeed to motivate the proposers to benchmark their algorithms against the state of the art. The goal is to show the effectiveness of the methodologies both in terms of efficiency and error and not to rely on putting together existing methodologies.

21Q: Per the BAA, during Phase I, the "Application Team" will compile and document "DoD Design Challenge Problems". The BAA seems to indicate that each project will have one application problem that it must address in a staged way in Phase I and Phase II. However, the implication also seems to be that each project will in addition have to address the "DoD Design Challenge Problems" in Phase II. Is this correct? If so, what is expected in terms of a plan in the proposal stage to address problems that are not yet specified? How will teams obtain the underlying simulation capabilities to address these new problems? Will teams in Phase II be given additional funding to address these additional challenge problems?

21A: The proposal should focus on the PI's chosen application problems which will be dealt with in ascending complexity in Phase I and Phase II. The Challenge problem would be based on the chosen application problems and will be an example of a real problem.

20Q: The BAA outlines very ambitious goals for large-scale simulation and design. Although the thrust is the development of new mathematics, testing and demonstration of techniques at

scale will require significant computational resources. The BAA does not seem to address this. Will means to acquire such resources be made available or should the proposals indicate plans for acquiring such resources and/or budget for the purchasing of simulation time as required by the research plan?

20A: Proposers should indicate plans for acquiring computational resources.

19Q: The suggested examples of application areas in the BAA tend to be engineered systems and do not seem to include more basic science applications. Would a challenging multi-physics, multi-scale application in an area such as astrophysics be considered out-of-scope?

19A: Engineered systems are more natural for DoD applications, but consideration of basic science applications would also be acceptable, as long as there is some DoD need for the application. For example, space weather is a rich area, but climate or weather in general is not DoD-specific, and it seems other agencies are more active in these areas.

18Q: Is the PM interested only in Bayesian approaches?

18A: Bayesian approaches are mentioned as possible approaches. The proposers are free to propose any scientifically sound approach that would provide advancements over existing methodologies.

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17Q: In Phase II what will the successful teams be expected to do with the challenges the application team chooses?

17A: The purpose of the application team is to provide these challenges, design problems and in some ways metrics where research on some real application problems can be implemented. So yes, the idea is that in Phase II the successful teams will be working on the challenge problems that the application team will provide them. In the BAA, this process has been explained, and the process will become more clear in the course of the program. The moment the program gets started the work of the application team is going to also start so this is going to be an evolving process, but the successful teams definitely will have a very clear idea of what to do with the challenges the application team will provide.

16Q: Program manager went out of her way to mention that this is a math program, not an engineering program. Could DARPA give examples of what types of efforts are engineering efforts and are not of interest to the program?

16A: There is nothing wrong with having an engineering program, but the point is to emphasize that the focus of the program would be on development of mathematical ideas. As Director Tompkins mentioned, we have different offices at DARPA and some work on systems-level complex engineering problems. In offices like DSO which support basic and fundamental research that could even be in the engineering realm, the work will not be on systems engineering with a focus on integration of existing tools in new application domains. So for a math program like EQUiPS the idea is not for performers to put together existing tools and basically come up with their own software and

framework to apply to a challenge problem or a test case. That's what I would consider an engineering problem. As a math program and a basic research program, what I would like is for people to start looking at developing new ideas, new methodologies. That's what I would consider a math program and how to differentiate it from engineering which is more of a systems engineering approach.

15Q: How much funding has DARPA put aside for this program for Phase I and Phase II?

15A: Per the BAA for entire program, the total budget available for award is approximately \$27M but the actual funding structure is not going to be made available.

14Q: How is the application team formed?

14A: It's a DARPA application team. It's a team that the PM will be forming so DARPA is responsible for this. It's not chosen by the proposers, but the challenge problems that the application team will consider are going to be based on the test cases that the proposers submit.

13Q: Do we have to have the physical system to do real experiments? For example, if you study power grids do we need to get results from real power grids or can we use a simulation to test it?

13A: If you can consider real systems where you can actually get data in order to perform validation, that would be fantastic. But we all know that for real systems getting data is not going to be possible for researchers, so I'm not going to make that mandatory. In fact, that's one of the reasons that I said very specifically that the test cases we're going to be looking at are going to change in complexity for Phase I and Phase II, meaning that it's not my expectation that you will be able to consider it a real complex system in Phase I and even in Phase II. Of course if you can have data to do any kind of validation that's a plus, but we all know that in most cases that's not a possibility.

12Q: Are foreign nationals eligible to participate and receive funding through EQUIPS?

12A: Yes, they are eligible to participate per BAA section III.A.

11Q: What is the minimum and maximum funding of individual awards?

11A: Per the BAA, section II.A., The level of funding for individual awards made under this solicitation has not been predetermined and will depend on the quality of the proposals received and the availability of funds. As Mr. Mutty mentioned, cost analysis is going to be an important part of this review. The funding level that you're requesting should match the technical research that you are proposing so this is what we're going to be looking into.

10Q: What are the lower and upper bounds on team sizes and budget?

10A: The teams should be large enough to have the expertise to address all the technical challenges that the BAA poses. The guideline is to have the right team that can handle the technical work, but think also about the fact that having a very large team

will require a lot more time in terms of management of the team. PM's preference is that PIs spend more time performing the research and doing the science instead of managing a large team. So just keep that in mind.

9Q: Could you please repeat the expected timeline, like announcements of the BAA due date?

9A: Per section IV.C. of the BAA (All times listed herein are Eastern Time):

-Posting Date: December 18, 2014

-Abstract Due Date: January 15, 2015, 4:00 p.m.

-FAQ Submission Deadline: February 18, 2015, 4:00 p.m.

-Full Proposal Due Date: February 25, 2015, 4:00 p.m.

8Q: What is the page limit on the white paper and full proposal?

8A: The BAA has very clear guidelines about the page limit, format, and other guidelines. See section IV.B.1 for Abstract guidelines and section IV.B.2 for Full Proposal guidelines.

7Q: Should we submit a white paper or directly to full proposal?

7A: It is highly encouraged that you submit a white paper first. This way you will get some feedback about your proposed work and I think getting that feedback is definitely valuable for working on the full proposal.

6Q: Mathematicians typically don't divide their work into well-defined cost tasks since, for example, it's difficult to tell how much time will be required for a proof. Can you speak to how to think about task breakdown and statement of work for more mathematical aspects of the work?

6A: As I mentioned in my remarks I do expect rigorous mathematical analysis for this work which I hope can ultimately be transitioned to industry. I'm aware that it may be difficult to come up with a very precise timeline and even cost for performing mathematical research, but this is actually always standard practice for proposal writing for mission-oriented funding agencies. We definitely take that into account that you may not be able to say, for example, that you will give one week to prove this theorem but at the same time we think that with the guidelines provided in the BAA you will have an idea of how you can come up with some sort of a time estimate for the mathematical research.

5Q: Are Department of Energy National Labs eligible to participate in the EQUIPS BAA?

5A: There is no issue with this. They are still eligible and the BAA has a section (III.A) that discusses eligibility criteria for engagement of DOE laboratory researchers.

4Q: Can you speak to the size and quantity of potential awards?

4A: Per the BAA, DARPA anticipates 5-10 total multidisciplinary teams. The level of funding for individual awards made under this solicitation has not been predetermined and will depend on the quality of the proposals received and the availability of funds. We know it's an important question because it affects the way you think of teaming and the size of your team.

3Q: Is it okay to partner with non-U.S. entities?

3A: Yes. See section III.A of BAA for more information regarding participation of non-U.S. entities. This program is basic research, so there is no issue with participation of non-U.S. entities as long as participants comply with any necessary nondisclosure agreements, security regulations, export control laws, and other governing statutes applicable under the circumstances.

2Q: Are quantum information science-related algorithms used for physical modeling and simulation consistent with the spirit of the BAA?

2A: Quantum information science-related algorithms are not necessarily a focus area of the BAA, but if the proposers can make a case that these algorithms can be used for UQ then certainly, there is no issue with that.

1Q: Has there been some seedling or related prior work done in preparation for this BAA?

1A: No.